

## Appendix B. Data Entry Guide for the Central Arizona Project Fish Monitoring Program

**DATA ENTRY GUIDE FOR THE CENTRAL ARIZONA PROJECT  
FISH MONITORING PROGRAM**

by

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Submitted to

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Data entry is straightforward and similar to Key Entry 3, except that effort and catch information occur on the same screen. When the “CAP monitoring.mbd” database is opened in Microsoft Access, the Main Switchboard greets the user. To start a new data entry session, left-click the Data Entry button on the Main Switchboard. The structure of the form is similar to the new datasheet, which should facilitate data entry. The fields in the datasheet/data entry form and their associated tables are explained below in order of entry. Generally navigation within the form can be performed by use of the mouse or keyboard. The “Enter” or “Tab” keys can be used to move to the next field, or the mouse can be used to move to any desired field by left clicking on that field. “Shift” + “Tab” can be used to return to the previous field, and “Ctrl” + “Tab” can be used at the end of the form to move to the next record (or left click on the  button). If you have data for different sample years, they must be entered during separate sessions -- do not enter them in the same data entry session.

STREAM NAME, REACH NAME, and STATION NAME fields on the datasheet should be filled out both with names or text descriptions and their numeric codes. Enter only the numeric codes in the form. Stream codes and their respective names are listed in Table 1 and are also available as a drop down menu in the form by pressing the  button at the end of the field. If the stream code or name recorded on the datasheet is not an option within the database, contact the database administrator. Streams (Gila, Salt, and San Pedro rivers, Aravaipa and Cienega creeks) have one to four reaches each and these are coded from upstream to down (1 for upstream most reach). Two reach codes are used for SRPs, SRPn, and FCG canals, 1 for stations upstream of the electrical fish barrier, and 2 for stations downstream. The CAP Canal has three reaches, reach 1 is used for the three sampled pumping stations west of Phoenix, reach 2 is used for the Salt-Gila siphon station, and reach 3 is used for the three sampled pumping stations south of Phoenix. Four codes are used for the Gila River; 1 for uppermost reach, 2 for upper-middle reach, 3 for lower-middle reach, and 4 for the lower reach (uppermost reach has not been sampled in recent years).

Numeric codes for stations in streams generally follow the same upstream to downstream order as reaches and are numbered 1 through 3; however, some stations have been eliminated or moved and so some numbers for some reaches are not used. The stations on the SRPs, SRPn, and FCG canals are recorded as miles downstream of electrical fish barriers (SRPs and SRPn) or dams (FCG), and these stations are coded to tenths of miles (e.g. 2.5).

The DATE/TIME IN field should be filled out for all sampling efforts and is simply a combined field that contains a standard date of the format (12/21/05) and time in 24 hour format (e.g., 5:55 PM is recorded as 17:55). The slashes and colons are automatically added, only the numeric values are required as input. The date and time are separated by a single space. The DATE/TIME OUT field should be filled out for passive gears deployed and allowed to fish (nets, traps, trotlines, etc). This field is filled in the same format as the DATE/TIME IN field, and the two fields are used to automatically calculate effort hours for passive gears. The DATE/TIME OUT field must be at a later date-time than the DATE/TIME IN for effort to be properly calculated.

HABITAT TYPE field is a numeric field (1-4) coded for four habitat types (Table 2, also as a drop down menu in the form). If HABITAT TYPE on the datasheet is not an option within the database, contact the database administrator. HABITAT NO. is a numeric field used to delineate multiple efforts and gears within the same habitat and station and must be an integer greater than or equal to one. FIXED STATION (Y/N) field is a text field to indicate whether the sample is part of the standard fixed station sample (Y) or additional opportunistic sampling (N). This field is most important for samples taken in streams (San Pedro, Gila and Salt rivers, etc.), the CAP canal, and in the SRPs and SRPn canals above the electrical fish barrier. Samples below the electrical fish barriers in the SRPs and SRPn canals and the entire sample in the FCG canal and on Aravaipa Creek between the fish barriers are always opportunistic (N).

GEAR TYPE is a numeric field with a value between 1 and 28 (Table 3, also as a drop down menu in the form). If the GEAR TYPE recorded on the datasheet is not an option within the database, contact the database administrator. There are two “special” codes to be aware of: 27 (visual observation) and 28 (dry site). Fields following GEAR TYPE are specific to the type of gear used, and are organized as such. Fields not related to the gear type of a specific sample should be left blank.

For any technique that uses electroshock to collect specimens (GEAR TYPE 7, 8, and 18-22), all fields under the subheading ELECTROSHOCK should be completed. PULSE/SEC, VOLTS, AMPS, TEMPERATURE, and SECONDS should be entered as they appear on the datasheet (TEMPERATURE is in °C and must be between 0 and 50).

For seines and nets (GEAR TYPE 1-13, 25, and 26), GEAR MESH (IN), GEAR LENGTH (FT), and GEAR DEPTH (FT) are numeric fields recorded either as integers or numbers with up to three decimal places. All three should be filled out for all seines and nets. NO. OF HAULS is used only for seines and dip nets. If a netting gear is baited, the BAIT TYPE field (under the ANGLER/TROT LINE subheading) should be filled out. BAIT TYPE is a numeric field with values between 1 and 8 (Table 4, also as a drop down menu in the form). If BAIT TYPE on the datasheet is not an option within the database, contact the database administrator.

For all techniques involving angling (GEAR TYPE 14-17), BAIT TYPE (explained above) and NO. OF HOOKS must be filled in.

% HABITAT SAMPLED must be filled out for efforts in which the sampling was conducted within a fixed station, FIXED STATION (Y/N) = Y, and of an appropriate gear type (GEAR TYPE 7-13 and 18-26).

The NOTES field should be filled out if there are notes on the datasheet. “No fish captured” is automatically entered into the NOTES field if no fish (0000 in the SPECIES field; see below) were recorded on the datasheet.

Catch data are made up of the SPECIES, AGE (0/1), NO. OF FISH, NO. OF VOUCHERS, and COMMENTS fields. The SPECIES field is alphanumeric usually containing a four letter code to

indicate a species (Table 5 or available as a drop down menu in the form). Four zeros in the SPECIES are used to indicate no species was captured for that effort. If the SPECIES recorded on the datasheet is not an option within the database, contact the database administrator. In addition, for efforts without catch, AGE (0/1) is left blank, and NO. OF FISH and NO. OF VOUCHERS left at 0. AGE (0/1) should be filled out for large bodied fishes, a 0 indicates a young-of-year fish, and a 1 indicates a fish one year old or older. Small bodied fishes are not aged and this field should be left blank. NO. OF FISH must be greater than 0 for all SPECIES codes except 0000. NO. OF VOUCHERS indicates the number of fish retained for scientific purposes. The COMMENTS field is for notable information regarding the species in the current record line (unusual size, undetermined species, or hybrid, etc.). A new catch record line automatically will be added after the "Enter" or "Tab" key is pressed in the COMMENTS field. When the last catch record line for the current datasheet has been entered, "Ctrl" + "Tab" is used to move on to the next datasheet.

After the last field datasheet has been entered, close your data entry session by left-clicking on the red box  at the top right corner of the form. The database will ask for a sample year, at which time you will enter the four-digit sample year the data represents. This field is necessary since sampling is occasionally conducted in January of the year after the year for which most of the sampling was conducted (e.g. SRPn canal sampling).

The Data Verification form will open immediately after entering the sample year. All data fields should be individually checked against the datasheets to ensure accuracy. In addition, the station name associated with the codes entered for stream, reach, and station should appear next to STATION NAME. This name should match what is on the datasheet. If not, contact the database administrator. Effort is also calculated for gears in which the DATE/TIME OUT field was completed, this should be verified with the datasheet. Once all fields have been verified, fill in the VERIFIED checkbox that appears in the upper right corner of the form using a left mouse click and move on to the next record by left-clicking on the  button. When all data entries have been verified against datasheets, close the Data Verification form. The data entry session now is complete. Records can be reviewed by opening the Data Review form from the Main Switchboard. Recent records will be at the end. The last record can be accessed by pressing the  button on the Data Review form. If a record is missing from the Data Review form, the VERIFIED checkbox may have been missed during data verification. Reopen the Data Verification form from the Main Switchboard. If all records were properly verified, the form should be blank.

If the data entry form is closed prior to completing all records, the sample year must be filled out, but data verification can either be completed for the data already entered, or the verification form can be closed and data entry and verification can be completed later. All previously entered records that are unverified will still be available for editing and verification. If data entry is partially completed and those records are verified, then the data entry form will be blank when it is reopened, and it is critical that the datasheets already verified are not reentered.

Table 1. Stream codes, short and long names, and comments used for data entry in the “CAP monitoring.mbd” Microsoft Access database.

<b>CODE</b>	<b>SHORT</b>	<b>LONG</b>	<b>COMMENTS</b>
1	SanP	San Pedro	
2	Gila	Gila	
3	Salt	Salt	
4	CAP	CAP	
5	SRPs	SRP South	
6	SRPn	SRP Arizona	SRP North (alternate name)
7	FCG	FCG	
8	Aravaipa	Aravaipa Creek	
9	Cienega	Cienega Creek	

Table 2. Habitat type codes and descriptions used for data entry in the “CAP monitoring.mbd” Microsoft Access database.

<b>HID</b>	<b>TYPE</b>	<b>DESCRIPTION</b>
1	Connected Pool	Area of water column with low current velocity and near zero surface gradient and little or no surface turbulence, often with small substrates; includes eddies/pocket water.
2	Riffle	Area of water column with fast current velocity and steep surface gradient, considerable surface turbulence, often with large substrates, includes cascades and rapids.
3	Run	Area of water column with rapid, non-turbulent flow, usually too deep to be a riffle and too fast to be a pool; includes glides.
4	Isolated Pool	Same as Connected Pool, but no surface water connection to the stream, and therefore no current velocity.

Table 3. Gear type codes, initials, and names used for data entry in the “CAP monitoring.mbd” Microsoft Access database.

<b>CODE</b>	<b>INITIALS</b>	<b>NAME</b>
1	G	gill net
2	T	trammel net
3	H	hoop net
4	F	fyke net
5	TR	trapnet
6	M	minnow trap
7	SGN	shock/gill net
8	STN	shock/trammel net
9	EXPG	experimental gill net
10	SS	straight seine
11	BS	bag seine
12	KS	kick seine
13	D	dip net
14	SC	spin-cast
15	FR	fly rod
16	DL	drop line
17	TL	trotline
18	Bp	backpack shocker
19	Ef	boat shocker
20	BKS	bank shocker
21	TB	tote barge shocker
22	ES	electric seine
25	TND	trammel net/drifted
26	GND	gill net/drifted
27	VO	visual observation
28	DS	dry site

Table 4. Bait type codes, bait types, and bait descriptions used for data entry in the “CAP monitoring.mbd” Microsoft Access database.

<b>BAIT_ID</b>	<b>BAIT_TYPE</b>	<b>BAIT_DESCRIPTION</b>
1	Artificial	Artificial lure
2	Live	Live bait
3	Hot dog	Hot dogs
4	Stink bait	Stink bait
5	Cut bait	e.g., anchovies or sardines
6	Pellet fish	Pellet fish food e.g., Aquamax
7	Pet food	dog or cat food
8	Other	corn, etc.

Table 5. Species codes and common and scientific names used for data entry in the “CAP monitoring.mbd” Microsoft Access database.

CODE	COMMON	SCIENTIFIC
AGCH	Longfin dace	<i>Agosia chrysogaster</i>
AMME	Black bullhead	<i>Ameiurus melas</i>
AMNA	Yellow bullhead	<i>Ameiurus natalis</i>
APSP	Spiny softshell turtle	<i>Apalone spinifera (Trionyx spinifera)</i>
TRSP	Spiny softshell turtle	<i>Apalone spinifera (Trionyx spinifera)</i>
CAAU	Goldfish	<i>Carassius auratus</i>
CAIN	Sonora sucker	<i>Catostomus insignis</i>
COLO	Pacu	<i>Colossoma sp</i>
CTID	Grass carp	<i>Ctenopharyngodon idella</i>
CYLU	Red shiner	<i>Cyprinella lutrensis</i>
CYCA	Common carp	<i>Cyprinus carpio</i>
DOPE	Threadfin shad	<i>Dorosoma petenense</i>
GAAF	Mosquitofish	<i>Gambusia affinis</i>
GIIN	Gila chub	<i>Gila intermedia</i>
GIRO	Roundtail chub	<i>Gila robusta</i>
ICPU	Channel catfish	<i>Ictalurus punctatus</i>
ICCY	Bigmouth buffalo	<i>Ictiobus cyprinella</i>
ICNI	Black buffalo	<i>Ictiobus niger</i>
KISO	Sonora mud turtle	<i>Kinosternon sonoriense</i>
LEPO	Undetermined or hybrid sunfish	<i>Lepomis ?</i>
LECY	Green sunfish	<i>Lepomis cyanellus</i>
LEMA	Bluegill	<i>Lepomis macrochirus</i>
LEMI	Redear sunfish	<i>Lepomis microlophus</i>
LICA	American bullfrog	<i>Lithobates catesbeianus (Rana catesbeiana)</i>
RACA	American bullfrog	<i>Lithobates catesbeianus (Rana catesbeiana)</i>
MIDO	Smallmouth bass	<i>Micropterus dolomieu</i>
MISA	Largemouth bass	<i>Micropterus salmoides</i>
MOCH	White bass	<i>Morone chrysops</i>
MOMI	Yellow bass	<i>Morone mississippiensis</i>
MOSA	Striped bass	<i>Morone saxatilis</i>
0000	No fish caught	No fish caught
ONMY	Rainbow trout	<i>Oncorhynchus mykiss</i>
ORAU	Blue tilapia	<i>Oreochromis aureus (Tilapia aurea)</i>
TIAU	Blue tilapia	<i>Oreochromis aureus (Tilapia aurea)</i>
ORMO	Mozambique tilapia	<i>Oreochromis mossambicus (Tilapia mossambica)</i>
TIMO	Mozambique tilapia	<i>Oreochromis mossambicus (Tilapia mossambica)</i>
PACL	Desert sucker	<i>Pantosteus clarki</i>
HYBR	Hybrid sucker	<i>Pantosteus X Catostomus</i>
PEFL	Yellow perch	<i>Perca flavescens</i>
PIPR	Fathead minnow	<i>Pimephales promelas</i>
POLA	Sailfin molly	<i>Poecilia latipinna</i>
POOC	Gila topminnow	<i>Poeciliopsis occidentalis</i>
PONI	Black crappie	<i>Pomoxis nigromaculatus</i>
PYOL	Flathead catfish	<i>Pylodictis olivaris</i>
RAYA	Lowland leopard frog	<i>Rana yavapaiensis</i>
RHOS	Speckled dace	<i>Rhinichthys osculus</i>

Table 5. Continued.

<b>CODE</b>	<b>COMMON</b>	<b>SCIENTIFIC</b>
SAVI	Walleye	<i>Sander vitreus (Stizostedion vitreum)</i>
STVI	Walleye	<i>Sander vitreus (Stizostedion vitreum)</i>
TICO	Loach minnow	<i>Tiaroga cobitis</i>
TILA	Undetermined cichlid	<i>Tilapia ?</i>
TIZI	Redbelly tilapia	<i>Tilapia zilli</i>
RANA	Undetermined Rana	<i>Rana ?</i>
FISH	Unknown fish species	Unknown fish species
UNKN	Unknown species	Unknown species